

WHAT IS CLAIMED IS:

1. A gating system for controlling the flow of a flowable material through a passageway having an inlet and an outlet, said gating system comprising:

an inlet blade assembly between said passageway inlet and passageway outlet, said inlet blade assembly including an inlet blade and a drive for moving said inlet blade to open and closed positions with respect to said passageway;

an outlet blade assembly between said inlet blade assembly and said passageway outlet, said outlet blade assembly including an outlet blade and a drive for moving said outlet blade to open and closed positions with respect to said passageway;

and a control system for controlling said drives for moving said inlet blade to its closed position before moving said outlet blade to its closed position with respect to said passageway, and for moving said outlet blade to its open position before moving said inlet blade to its open position with respect to said passageway.

2. The gating system according to Claim 1, wherein said outlet blade assembly includes a seal cooperable with said outlet blade when in its closed position to seal said passageway and said inlet blade assembly therein.

3. The gating system according to Claim 2, wherein said seal is carried by said outlet blade.

4. The gating system according to Claim 2, wherein said seal is an inflatable seal; and wherein said control system inflates said seal after the outlet blade has been moved to its closed position, and deflates said seal before the outlet blade is moved to its open position.

5. The gating system according to Claim 1, wherein said inlet blade assembly includes a pair of open frame members between which said inlet blade is movable to its open and closed positions.

6. The gating system according to Claim 5, wherein the open frame member of the inlet blade assembly facing the outlet blade assembly is interrupted to permit passage to the outlet blade assembly of flowable material located between the two frame members of the inlet blade assembly during the movement of the inlet blade to its closed position.

7. The gating system according to Claim 1, wherein said outlet blade assembly includes a pair of frame members between which said outlet blade is movable to its open and closed positions.

8. The gating system according to Claim 7, wherein the open frame member of the outlet blade assembly proximal to the passageway outlet carries, on its surface facing the other open frame member of the outlet blade assembly, a plurality of jet cleaning nozzles controlled by said control system for discharging cleaning jets towards the outlet blade to clean it during the opening and/or closing movements of the outlet blade.

9. The gating system according to Claim 7, wherein said outlet blade carries a plurality of jet cleaning nozzles controlled by said control system for cleaning said open frame members of the outlet blade assembly during the opening and/or closing movements of the outlet blade.

10. The gating system according to Claim 7, wherein the open frame member of the outlet blade assembly facing away from the inlet blade assembly is formed with an inclined surface to move the outlet blade towards the open frame member of the outlet blade assembly facing the inlet blade assembly during the end movement of the outlet blade to its closed position.

11. The gating system according to Claim 1, wherein said drives are enclosed in a common housing; and wherein said housing includes an air inlet and an air outlet for air flushing the interior of said housing.

12. The gating system according to Claim 1, wherein each of said drives includes a drive member, a driven member, and an arm extending through an elongated, sealed slot in said drive member and coupling said driven member to its respective blade.

13. The gating system according to Claim 12, wherein in each of said drives, said drive member is a cylinder, and said driven member is a piston movable therein.

14. The gating system according to Claim 12, wherein in each of said drives, said drive member is a screw, and said driven member is a nut movable thereon.

15. The gating system according to Claim 1, wherein said passageway is a vertical passageway, said inlet and outlet blades are horizontal blades, and said flowable material flows through said passageway by gravity, whereby said inlet blade assembly is

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an upper blade assembly, and said outlet blade assembly is a lower blade assembly underlying said upper blade assembly.

16. The gating system according to Claim 15, wherein said passageway outlet communicates with a tank of said flowable material; and wherein said tank includes a source of pressurized gas for conveying the flowable material from said tank to another destination.

17. The gating system according to Claim 16, wherein said control system also controls said source of pressurized gas to pressurize said tank only when said outlet blade of the outlet blade assembly has been moved to its closed position.

18. Conveying apparatus for conveying a flowable material, said conveying apparatus comprising:

- a gating system according to Claim 1;

- a container for containing a quantity of flowable material and for feeding same by gravity to the inlet of said passageway;

- a tank communicating with the outlet of said passageway; and

- a source of pressurized gas to pressurize said tank and to convey the flowable material therein to another destination; said control system also controlling said source of pressurized gas to pressurize said tank only when the outlet blade of the outlet blade assembly has been moved to its closed position.

19. The conveying apparatus according to Claim 18, wherein the apparatus comprises two gating systems, each underlying a part of said container, and two tanks, each underlying one of said gating systems and communicating with said source of pressurized gas;

and wherein said control system controls said drives of the gating systems and said source of pressurized gas to alternately fill one tank with flowable material from said container via its gating system, while pressurizing the other tank to convey its contents to said another destination.